

ADA 212 997

20030205144

**DETERMINANTS OF THE DELEGATION OF HEALTH CARE
ABOARD SHIPS WITH WOMEN ASSIGNED**

D. Stephen Nice, Ph.D.
and
Susan M. Hilton, M.A.

Health Services Research Department
Naval Health Research Center
P.O. Box 85122
San Diego, CA 92138-9174

Accession For	
NTIS CRARI	2
DTIC TAB	000
Unannounced	
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

Report 89-23, was supported by the Naval Medical Research and Development Command, Department of the Navy under Work Unit No. 65152N M0106.001.6001. The views expressed are those of the authors and do not reflect the official policy or position of the Department of the Navy, Department of Defense, or the U.S. Government. This report is approved for public release with unlimited distribution. The authors gratefully acknowledge the assistance of Linda Luccitti, Suzanne Kaszas, HM2 Bethea, and HM2 Walborough in this study.

Summary

Problem

Although medical officers aboard large U.S. Navy ships frequently delegate primary patient care to hospital corpsmen, little is known about the determinants of patient delegation or the potential role of non-physician health care providers, such as physician assistants or hospital corpsmen with additional obstetrics/gynecological (OB/GYN) training.

Objective

The purpose of this study was to identify the potential determinants and distribution of shipboard patient delegation decisions.

Approach

During a one-month period, physicians aboard five U.S. Navy ships provided an estimate of the minimum level of health care provider required to diagnose/treat each case which presented at sickcall (N=2,725).

Results

On a case-by-case basis, the physicians indicated the following potential distribution of patient delegation: consultation (1.4%), medical officer (18.6%), physician assistant/nurse practitioner (3.7%), corpsman with additional OB/GYN training (2.2%), and corpsman (69.2%). The patient's diagnosis was the best predictor of the indicated level of health care required. Medical officers were most likely to see patients with potentially serious or difficult diagnoses, including mental disorders. Patient characteristics such as sex and paygrade were not significantly related to the potential delegation decision.

Conclusions

The data clearly document the importance of hospital corpsmen in the delivery of health care services aboard ship and support a strong, broad-based clinical training program. Given that shipboard medical officers appear to be unfamiliar with the potential role of physician assistants in the Navy, the reintroduction of physician assistants into Navy medicine should be accompanied by a strong, unambiguous policy on their utilization.

DETERMINANTS OF THE DELEGATION OF HEALTH CARE
ABOARD SHIPS WITH WOMEN ASSIGNED

D. Stephen Nice, Ph.D.

and

Susan M. Hilton, M.A.

Naval Health Research Center

San Diego, CA

Within medical departments aboard large surface ships in the U.S. Navy, the physician often delegates primary patient care to hospital corpsmen. This process increases the efficiency of shipboard health care delivery and serves to define the roles and responsibilities of the physician and the hospital corpsman. Similar trends toward the use of physician assistants and other non-physician health care providers in primary care in the private sector were precipitated in the late 1960s and early 1970s by rising health care costs and by a perceived shortage of physicians.¹⁻³ These trends have generated some informative research on the use of non-physician health care providers in primary care.

In a comprehensive study of physician assistants in 16 small primary care practices with physicians, Crandall and his colleagues⁴ reported that the initial assignment of patients was evenly split between the physician and the physician assistant. Physicians, however, were somewhat more likely to see women, older people, and people with more chronic conditions. In addition, patients whose primary diagnosis was metabolic, cardiac, or psychiatric were most likely to be assigned to a physician while patients classified as "general" or dermatological were the most likely to be assigned to the physician assistant. Interestingly, other results from this study support previous research which found that physician assistants often serve as a substitute rather than as an extender for their employing physicians.⁵

The degree to which non-physician health care providers are delegated patient care responsibilities varies considerably by practice setting, with large practices delegating a higher proportion of medical services.⁶ Although the process of health care delegation aboard ship has clear

implications for staffing and training, there has been no systematic investigation of the degree to which shipboard physicians delegate or the determinants of health care delegation. Given the increasing complexity of shipboard medicine (e.g., the assignment of a greater number of women to a broader range of ships, greater NAVOSH requirements, expanded quality assurance programs, etc.), and the associated implications for a variety of operational medical policies, this study was undertaken to provide an estimate of the distribution of health care providers required to efficiently manage the shipboard patient care workload and the factors which may affect the decision to delegate patient care to a non-physician.

METHODS

Sample

The sample consisted of all sickcall visits (N=2,906) aboard four destroyer tenders (ADs) and one repair ship (AR) during a one-month period. Although women comprised 27 percent of the aggregate crew aboard these ships, approximately 35 percent of all sickcall visits were accounted for by women. Enlisted personnel accounted for 98 percent of all visits, and these visits were approximately evenly distributed between rated (E-4 and above) and non-rated (E-3 and below) personnel.

Procedures

Physicians aboard all designated ships were requested to indicate the minimum type of health care provider required to diagnose/treat each case which presented at sickcall. The provider categories included, (a) independent duty hospital corpsman (IDC), (b) IDC with additional obstetrics and gynecological (OB/GYN) training, (c) physician assistant/nurse practitioner (PA/NP), (d) physician, and (e) consult (specialist or hospitalization). Physicians were instructed that the entry should not be based on the provider actually seen, but rather the minimum level of health care provider required. At the end of the one-month data collection period, the sickcall logs were photocopied and forwarded to the Naval Health Research Center. Each narrative diagnosis was then transformed into a three-digit International Classification of Diseases (ICD-9) code⁷ by one of five research staff members.

RESULTS

Of the original 2,906 patient visits, the research staff was unable to classify 30 diagnoses from the information provided in the sickcall logs. In an additional 151 cases, the required level of health care provider was not provided. Therefore, the final sample consisted of 2,725 patient visits.

As shown in Figure 1, the physicians indicated that approximately 80 percent of the sickcall visits could be delegated to a non-physician health care provider. The IDC was most frequently identified as the appropriate level of care (69.2%). Physician assistants/nurse practitioners and IDCs with additional OB/GYN training were believed to represent the appropriate level of care in 3.7 and 2.2 percent of the cases, respectively. Interviews conducted at the conclusion of the study indicated that the relatively small proportion of the case load potentially delegated to PA/NPs and IDCs with additional OB/GYN training reflected the physicians' lack of familiarity with these occupational specialties and the corresponding level of uncertainty regarding their capabilities or their potential autonomy under a different regulatory structure.

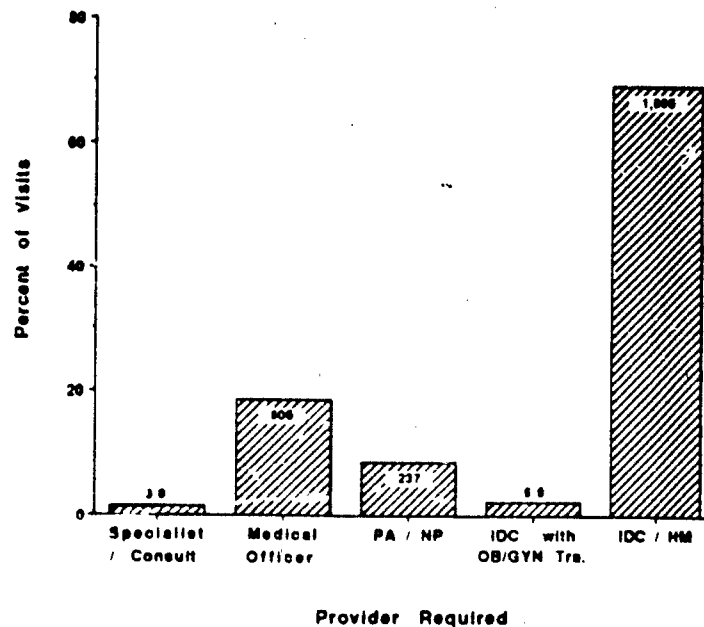


Figure 1. Health Care Provider Indicated for Shipboard Sickcall Visits (N=2,725)

In order to assess the process of patient delegation, analyses were conducted to explore the relationships between patient characteristics, such as sex and paygrade, and the level of health care determined to be appropriate by the physician. Among the relatively few patients for whom an PA/NP or IDC with additional OB/GYN training was indicated as the appropriate level of care, females were significantly overrepresented [$\chi^2(3)=108.8$, $p<.001$]. There was, however, no significant sex effect among the majority of patients (89%) for whom a medical officer or an IDC was indicated as the appropriate level of care. Similarly, paygrade was not significantly associated with the identified level of care required.

A second series of analyses were conducted to identify relationships between diagnoses and the appropriate level of health care provider. Given the relatively small number of potential patient delegations to PA/NPs or IDCs with additional OB/GYN training, and the relatively large number of diagnostic categories, it was necessary to reclassify all cases into either physician or non-physician as the appropriate level of health care provider. This procedure provided an adequate sample distribution to meet the requirements of the analyses.

In the initial analysis of the relationship between diagnosis and level of health care provider required, all diagnoses were collapsed into one of seventeen major diagnostic categories in accordance with the ICD-9 classification procedures.⁷ A preliminary analysis revealed, however, that six of the seventeen diagnostic categories did not have a sufficient number of cases to remain in the analysis. Therefore, the following diagnostic categories were removed and the analysis was recomputed: (1) neoplasms, (2) endocrine, nutritional and metabolic diseases, and immunity disorders, (3) diseases of the blood and blood-forming organs, (4) diseases of the circulatory system, (5) complications of pregnancy, and (6) congenital anomalies.

As shown in Figure 2, the results of this analysis demonstrated a significant relationship between the diagnostic category and the indicated level of health care provider required [$\chi^2(10)=157$; $p<.001$]. In general, cases involving mental disorders, the genitourinary system, or symptoms, signs, and ill-defined conditions were more likely to receive the attention of a medical officer. On the other hand, cases involving the respiratory system, or injury, were more likely to be delegated to a non-physician

provider. A separate analysis indicated that potential patient delegation within any of the diagnostic categories was not significantly associated with patient sex.

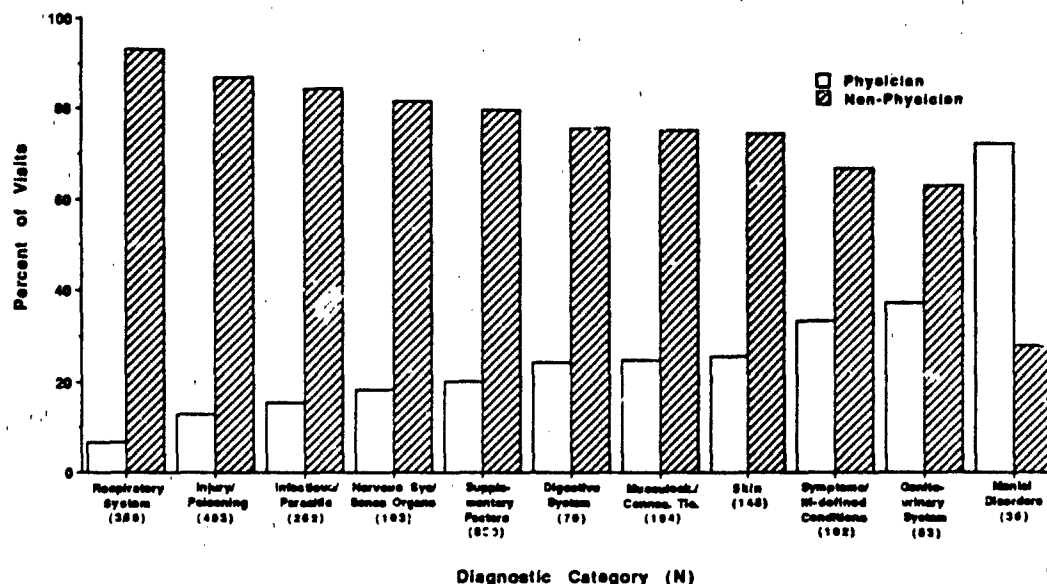


Figure 2. Health Care Provider Indicated By Diagnostic Category (N=2,646)

Although the appropriate level of health care provider was significantly associated with diagnostic category, there were relatively few specific diagnoses in which the majority of cases were designated as requiring a medical officer. As shown in Table 1, medical officers were most likely to be identified for patients who (1) had been exposed to a communicable disease, (2) expressed symptoms involving the digestive system, or the abdominal or pelvic region, (3) required special screening, such as PAP tests, or (4) had a pregnancy complication. The hospital corpsman, on the other hand, was very likely to be indicated as the appropriate level of care for patients with (1) colds or flu, (2) skin problems, such as corns and contact dermatitis, (3) motion sickness, and (4) minor injuries. In order to simplify the presentation in Table 1, some very similar diagnoses were collapsed into slightly larger categories. A complete listing of the specific diagnoses within each category is presented in Appendix A.

Table 1

Perceptions of Level of Care Required for Sickcall Diagnosis Groupings

Diagnosis Grouping [Log terms] ^a (N of Diagnoses in the Grouping)	% of Cases Indicating Physician Required (N)
Contact with or exposure to communicable diseases (1)	83 (6)
Symptoms involving digestive system [morning sickness /vomiting/nausea] (1)	80 (5)
Neurotic or personality disorders/other nonpsychotic mental disorders (10)	72 (36)
Special screening for other conditions [BP for PFT / HCT / HCG] (1)	59 (27)
Complications of pregnancy or childbirth or the puerperium (4)	57 (7)
Other symptoms involving abdomen or pelvis [abdominal/flank pain/cramps] (1)	54 (13)
Endocrine/nutritional/metabolic diseases or immunity disorders (7)	53 (19)
Pulmonary/related or other respiratory system diseases (6)	50 (14)
Diseases of male genital organs (4)	50 (10)
Observation/evaluation for suspected condition [over-the-counter medication] (1)	49 (35)
Diseases of the circulatory system (4)	45 (11)
Other local infections of skin or subcutaneous tissue [other cyst] (1)	43 (21)
Neoplasms (5)	42 (19)
Osteopathies/chondropathies/acquired musculoskeletal deformities (3)	42 (12)
Other cellulitis or abscess (1)	40 (5)
Diseases of sebaceous glands [sebaceous cyst / acne] (1)	38 (21)
Other disorders of female genital tract (7)	38 (37)
General symptoms [fainted /syncope /high temperature /fatigue /insomnia] (1)	37 (16)
Complications of medical care, NEC* [reaction to medication] (1)	37 (8)
Special screening for malignant neoplasms [pap test] (1)	37 (51)
Inflammatory disease of cervix, vagina, or vulva [vaginitis] (1)	36 (11)
Fracture of upper/lower limb (8)	35 (20)
Symptom involving nervous/musculoskeletal system [heat treatm. /spinal manip.] (1)	33 (24)
Diseases of hair or hair follicles [ingrown hair /PPB /folliculitis] (1)	30 (23)
Diseases of esophagus, stomach, or duodenum (4)	30 (33)
Arthropathies or related disorders (3)	30 (50)
Migraine (1)	29 (7)
Symptoms involving respiratory or other chest symptoms [hemoptysis] (1)	29 (7)
Diseases of nail [ingrown toenail] (1)	27 (11)
Foreign body on external eye (1)	26 (19)
General medical exam [physical exam] (1)	25 (240)
Other disorders of urethra/urinary tract [UTI] (1)	24 (21)
Syphilis or other venereal disease (3)	20 (49)
Atopic dermatitis or related conditions (1)	20 (5)
Rheumatism, excluding the back (4)	19 (26)
Other/unspecified disorders of back [back pain/spasm / OMT] (1)	19 (100)
Mycoses (4)	19 (64)
Cellulitis or abscess of finger or toe [paronychia] (1)	18 (11)
Injury, other/unspecified [motor vehicle accident / soft tissue injury] (1)	18 (17)
Diseases of the ear or mastoid process (6)	17 (57)
Toxic effect of alcohol [drunk] (1)	17 (6)
Other disorders of skin or subcutaneous tissue [blisters] (1)	17 (6)
Other bacterial diseases (2)	16 (31)
Special screening for cardiovascular/respiratory/genitourinary disease (1)	15 (39)
Persons encountering health service in circums. related to reproduction/devel. (3)	15 (46)
Sprains/strains or joints/adjacent muscles (9)	15 (129)
Disorders of the eye or adnexa (5)	15 (34)
Other diseases due to viruses or Chlamydiae (2)	14 (35)
Contusion with intact skin surface (5)	13 (63)
Other/unspecified aftercare [dres. change /suture removal /Rx refill /INH FU] (1)	11 (198)
Symptom involving skin/other integumentary tissue [rash/numbness/edema] (1)	11 (28)
Special screening for bacterial/spirochetal disease [PPD / took culture] (1)	10 (19)
Other noninfective gastroenteritis or colitis [diarrhea] (1)	10 (29)
Viral infection in cond. classified elsewh./of unspecified site [viral syndr.] (1)	9 (66)
Superficial injury (10)	8 (128)
Special screen for mental disorder/developmental handicap [subst. abuse screen] (1)	8 (13)
Acute respiratory infections (4)	7 (213)
Encounter for administrative purposes [check-in / check-out] (1)	6 (95)
Contact dermatitis or other eczema (1)	4 (24)
Burns (5)	3 (31)
Acute pharyngitis [sore throat / rule-out strep] (1)	2 (40)
Person with potential health hazard related to communicable disease (2)	0 (48)
Acute nasopharyngitis (common cold) [coryza] (1)	0 (47)
Acute sinusitis (1)	0 (31)
Effect of other external cause [motion sickness /bug bite /smoke inhalation] (1)	0 (15)
Open wound (4)	0 (8)
Corns or callosities (1)	0 (7)
Chronic pharyngitis or nasopharyngitis (1)	0 (6)
Influenza (1)	0 (5)

^a See footnote of Appendix A.

DISCUSSION

The data from this study clearly document the importance of hospital corpsmen in the delivery of health care services aboard ship. While studies in the private sector generally report a delegation rate in the range of 15-30%,⁶ physicians aboard ship identified non-physician health care providers as the appropriate level of care for approximately 80% of the patients. This finding is consistent with a previous report in which independent duty corpsmen aboard ships without a medical officer were found to treat 82% of their patients and referred only 18% to medical officers while in port.⁸ The relatively higher level of potential patient delegation aboard U.S. Navy ships may be due in large part to the relatively young, healthy population served in this setting. In the private sector, the majority of the patient delegation occurs among patients under the age of 65.⁴ Patient delegation aboard ship may also be enhanced by the medical officer's confidence in the skill and judgment of the hospital corpsmen and the expectation that a consultation will be requested if unforeseen problems arise.⁶ In addition, the high patient volume generated aboard large U.S. Navy ships may contribute to increased levels of patient delegation.⁶

The relatively small proportion of cases for whom a PA/NP or an IDC with additional OB/GYN training was indicated as appropriate was not anticipated. A series of interviews with the shipboard medical officers at the conclusion of the study, however, revealed that medical officers are relatively unfamiliar with the capabilities of PA/NPs or IDCs with additional OB/GYN training, and were reluctant to endorse patient delegation. Medical officers further indicated uncertainty regarding the potential autonomy of PA/NPs in patient care and, therefore, generally declined to identify them as an appropriate level of health care provider. This perception underscores the importance of providing strong, unambiguous policy regarding the use of PAs as they are reintroduced into Navy medicine.

The data from the present study suggest that medical officers aboard ship are generally involved in potentially more serious cases, or in those cases which require more sophisticated diagnostic tests or procedures. It is also clear, however, that the hospital corpsmen are identified as the

appropriate level of care over an impressive range of relatively complex health care problems. Although these findings are generally descriptive, they are believed to underscore the importance of the hospital corpsman in fleet medicine and support a strong, broad-based clinical training program.

REFERENCES

1. Estes EH: The critical shortage -- physicians and supporting personnel. Ann Inter Med 1968; 69:957.
2. Ford AS: The physician's assistant: a national and local analysis. New York: Praeger Publishers, 1975.
3. Sadler AM, Sadler RL, Bliss AA (eds.): The physician's assistant -- today and tomorrow. 2nd ed. Cambridge, MA: Ballinger Publishing Co., 1975.
4. Crandall LA, Santulli WP, Radelet ML, Kilpatrick KE, Lewis DE: Physician assistants in primary care -- patient assignment and task delegation. Med Care 1984; 22:268.
5. Miles DL, and Rushing WA: A study of physician's assistants in a rural setting. Med Care 1976; 14:987.
6. Record JC, McCally M, Schweitzer SO, Bloomquist RM, Berger BD: New health professionals after a decade and a half: delegation, productivity and costs in primary care. J Health Polit Policy Law 1980; 5:470.
7. U.S. Department of Health and Human Services: The International Classification of Diseases, 9th Revision, Clinical Modification: ICD-9-CM, Volume 2, second edition. Washington, DC, U.S. Government Printing Office, September 1980.
8. Nice DS, and Conway SW: Patient referrals and consultations initiated by Pacific fleet ships during in-port periods. Milit Med 1986; 151:466.

Appendix A
Diagnoses By Groupings

Diagnoses	N of Cases		ICD-9 Code
	Grp.	Diag.	
Contact with or exposure to communicable disease	6		V01
Symptoms involving digestive system (morning sickness / vomiting / nausea)	5		787
Neurotic or personality disorders, or other nonpsychotic mental disorders	36		
Personality disorders		1	301
Alcohol dependence syndrome (Antabuse reaction)		6	303
Drug dependence		4	304
Nondependent abuse of drugs		2	305
Physiological malfunction arising from mental factors		2	306
Special symptom/syndrome, NEC* (tension headache / tick / psychol. couns.)		9	307
Acute reaction to stress		4	308
Adjustment reaction (situational depression)		1	309
Depressive disorder, not elsewhere classified (suicide gesture/attempt)		3	311
Disturbance of conduct, not elsewhere classified		4	312
Special screening for other conditions (BP for PPT / HCT / HCG)	27		V82
Complications of pregnancy or childbirth or the puerperium	7		
Unspecified abortion		4	637
Early or threatened labor		1	644
Other complications of pregnancy, not elsewhere classified		3	646
Other current conditions in the mother classified elsewhere but complicating pregnancy, childbirth, or the puerperium		1	648
Other symptoms involving abdomen or pelvis (abdom./flank pain/cramps)	13		789
Endocrine/nutritional/metabolic diseases or immunity disorders	19		
Congenital hypothyroidism		1	243
Other disorders of thyroid		2	246
Diabetes mellitus		1	250
Other endocrine disorders		10	259
Gout		1	274
Disorders of fluid, electrolyte, or acid-base balance (dehydration)		3	276
Obesity or other hyperalimentation		1	278
Pulmonary/related or other respiratory system diseases	14		
Bronchitis, not specified as acute or chronic		8	490
Chronic bronchitis		1	491
Asthma		1	493
Chronic airways obstruction, not elsewhere classified		2	496
Respiratory conditions due to other/unspecified external agents		1	508
Pleurisy		1	511
Diseases of male genital organs	10		
Inflammatory diseases of prostate		3	601
Hydrocele		1	603
Orchitis or epididymitis		4	604
Other disorders of male genital organs		2	608
Observation/evaluation for suspected condition (over-the-counter medication)	35		V71
Diseases of the circulatory system	11		
Essential hypertension		1	401
Varicose veins of lower extremities		1	454
Hemorrhoids		8	455
Hypotension		1	458
Other local infections of skin or subcutaneous tissue (other cyst)	21		686
Neoplasms	19		
Benign neoplasm of bone or articular cartilage		1	213
Lipoma		4	214
Benign neoplasm of skin		2	216
Hemangioma or lymphangioma, any site		2	228
Neoplasm of unspecified nature (mole / leiomyoma)		10	239
Osteopathies/chondropathies/acquired musculoskeletal deformities	12		
Other disorders of bone or cartilage (costochondritis)		10	733
Flat foot (pes planus)		1	734
Other acquired deformity		1	738

Diagnoses	N of Cases		ICD-9 Code
	Grp.	Diag.	
Other cellulitis or abscess	5		682
Diseases of sebaceous glands [sebaceous cyst / acne]	21		706
Other disorders of female genital tract	17		
Noninflam. disorders of ovary/fallopian tube/broad ligament [ovarian cyst]		1	620
Noninflammatory disorders of cervix		1	622
Noninflammatory disorders of vagina		1	623
Pain/other symptoms assoc. w. female genital organs [PMS / menstrual cramp]	10		625
Disorders of menstruation/other abnormal bleeding from female genital tract [dysmenorrhea]		9	626
Infertility, female		1	628
Other disorders of female genital organs [vaginal rash/discharge]	14		629
General symptoms [fainted / syncope / high temp. / fatigue / insomnia]	16		780
Complications of medical care, NEC* [reaction to medication]	8		999
Special screening for malignant neoplasms [pap test]	51		V76
Inflammatory disease of cervix, vagina, or vulva [vagininitis]	11		616
Fracture of upper/lower limb	20		
Fracture of clavicle		1	810
Fracture of carpal bone(s)		1	814
Fracture of metacarpal bone(s)		1	815
Fracture of one or more phalanges of hand		9	816
Multiple fractures of hand bones		3	817
Ill-defined fractures of upper limb		3	818
Fracture of tibia or fibula		1	823
Fracture of unspecified bones		1	829
Symptoms involving nervous/musculoske. sys. [heat treatm. / spinal manip.]	24		781
Diseases of hair or hair follicles [ingrown hair / PFB / folliculitis]	23		704
Diseases of esophagus, stomach, or duodenum	33		
Diseases of esophagus		2	530
Gastritis or duodenitis		23	535
Disorders of function of stomach		1	536
Other disorders of stomach or duodenum		7	537
Arthropathies or related disorders	50		
Internal derangement of knee [chondromalacia / CMP]		31	717
Other derangement of joint		5	718
Other or unspecified disorders of joint [knee/hand pain]		14	719
Migraine	7		344
Symptoms involving respiratory or other chest symptoms [hemoptysis]	7		786
Diseases of nail [ingrown toenail]	11		703
Foreign body on external eye	19		930
General medical exam [physical exam]	240		V70
Other disorders of urethra/urinary tract [UTI]	21		599
Syphilis or other venereal disease	49		
Other/unspecified syphilis		1	097
Gonorrheal infections		5	098
Other venereal diseases [STD / MS9]		43	099
Atopic dermatitis or related conditions	5		691
Rheumatism, excluding the back	24		
Peripheral enthesopathies or allied syndromes [spur / bursitis / tendonitis / tennis elbow]		8	726
Other disorders of synovium, tendon, or bursa [ganglion cyst]		9	727
Disorders of muscle, ligament, or fascia [muscle spasm]		4	728
Other disorders of soft tissues [muscle cramp]		5	729
Other/unspecified disorders of back [back pain/spasm / OMT]	100		724

Diagnoses	N of Cases		ICD-9 Code
	Grp.	Diag.	
Mycoses	64		
Dermatophytosis [athlete's foot / tinea pedis/corporis]		13	110
Dermatomycosis, other/unspecified [tinea versicolor]		14	111
Candidiasis [moniliasis / yeast infection / monilia vaginitis]		33	112
Other mycoses		4	117
Cellulitis or abscess of finger or toe [paronychia]	11		681
Injury, other/unspecified [motor vehicle accident / soft tissue injury]	17		959
Diseases of the ear or mastoid process	57		
Disorders of external ear [otitis externa / cerumen / ear flush / abscess]		16	380
Nonsuppurative otitis media or Eustachian tube disorders		12	381
Suppurative or unspecified otitis media		10	382
Other disorders of middle ear or mastoid		1	385
Vertiginous syndrome/other disorder of vestibular system [dizzy / vertigo]		1	386
Other disorders of ear		17	388
Toxic effect of alcohol [drunk]	6		980
Other disorders of skin or subcutaneous tissue [blisters]	6		709
Other bacterial diseases	31		
Streptococcal sore throat or scarlatina [strep]		29	034
Bacterial infec. in cond. classif. elsewh. or of unspecified site		6	041
Special screening for cardiovascular/respiratory/genitourinary disease [blood pressure check / EKG / hypertension screen]	39		V81
Persons encountering hlth. svc. in circums. related to reproduc./devel.	46		
Normal pregnancy		4	V22
Contraceptive management [birth-control-pill refill]		39	V25
Procreative management		3	V26
Sprains/strains or joints/adjacent muscles	129		
Sprains/strains of shoulder or upper arm		13	840
Sprains/strains of elbow or forearm		9	841
Sprains/strains of wrist or hand		13	842
Sprains/strains of hip or thigh		2	843
Sprains/strains of knee or leg		21	844
Sprains/strains of ankle or foot		35	845
Sprains/strains of sacroiliac region		3	846
Sprains/strains of other/unspecified parts of back [of neck]		28	847
Other or ill-defined sprains/strains		5	848
Disorders of the eye or adnexa	34		
Visual disturbances [photophobia]		1	368
Corneal opacity or other disorders of cornea		1	371
Disorders of conjunctiva [conjunctivitis]		14	372
Inflammation of eyelids		3	373
Other disorders of eye		15	379
Other diseases due to viruses or Chlamydiae	35		
Other diseases of conjunctiva due to viruses or Chlamydiae		4	077
Other diseases due to viruses or Chlamydiae [warts / condyloma acuminatum]		31	078
Contusion with intact skin surface	43		
Contusion of face, scalp, or neck, except eyes		3	920
Contusion of eye or adnexa		3	921
Contusion of trunk [rib contusion]		8	922
Contusion of upper limb [thumb]		24	923
Contusion of lower limb or of other/unspecified sites		25	924
Other/unspecified aftercare [dressing change / suture removal / prescription refill / INH follow-up / nicorette gum]	198		V58
Symptoms involving skin or other integumentary tissue [rash/numbness/edema]	28		782
Special screening exam for bacterial or spirochetal diseases [TB test / PPD / took culture]	19		V74
Other noninfective gastroenteritis or colitis [diarrhea]	29		558
Viral infection in condition classif. elsewh. or of unspec. site [viral syndrome / general malaise]	66		079

Diagnoses	N of Cases		ICD-9 Code
	Grp.	Diag.	
Superficial injury	128		
Superficial injury of face, neck, or scalp, except eye		15	910
Superficial injury of trunk		2	911
Superficial injury of shoulder or upper arm		2	912
Superficial injury of elbow, forearm, or wrist		5	913
Superficial injury of hand(s), except finger(s) alone		18	914
Superficial injury of finger(s)		42	915
Superficial injury of hip, thigh, leg, or ankle [knee pain]		6	916
Superficial injury of foot or toe(s)		3	917
Superficial injury of eye or adnexa [eye/corneal abrasion]		17	918
Superficial injury of other, multiple, or unspecified sites		18	919
Special screening for mental disorders or developmental handicaps [substance abuse screening]	13		V79
Acute respiratory infections	213		
Acute tonsillitis		5	463
Acute laryngitis/tracheitis		3	464
Acute upper respiratory infections of multiple/unspecified sites [URI]		199	465
Acute bronchitis/bronchiolitis		6	466
Encounter for administrative purposes [check-in / check-out]	95		V68
Contact dermatitis or other eczema	24		692
Burns	31		
Burn confined to eye/adnexa		1	940
Burn of upper limb, except wrist/hand		4	943
Burn of wrist(s) or hand(s)		10	944
Burn of lower limb(s)		6	945
Burn, unspecified		10	949
Acute pharyngitis [sore throat / rule-out strep]	40		462
Person with potential health hazard related to communicable disease	48		
Need for prophylactic vacc./inocc. against bacterial diseases [typhoid immunisation]		42	V03
Need for prophylactic vacc./inocc. against certain viral diseases [flu shot]		6	V04
Acute nasopharyngitis (common cold) [coryza]	47		460
Acute sinusitis	31		461
Effects of other external causes [motion sickn. / bug bite / smoke inhala.]	15		994
Open wound	8		
Other open wound of head		2	873
Open wound of hand(s), except finger(s) alone		1	882
Open wound of finger(s)		4	883
Open wound of toe(s)		1	893
Corns or callosities	7		700
Chronic pharyngitis or nasopharyngitis	6		472
Influenza	5		487

* NEC = not classified elsewhere.

NOTE: Non-bracketed wording in diagnoses is from the International Classification of Diseases, 9th Revision, Clinical Modification, Volume 1, pages 114-118. Hence, the word "other" refers to diagnoses not necessarily presented in this listing. Words and abbreviations enclosed in brackets are from shipboard medical logs, presented to indicate with which ICD-9 codes they were associated.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

1a REPORT SECURITY CLASSIFICATION Unclassified			1b RESTRICTIVE MARKINGS N/A	
2a SECURITY CLASSIFICATION AUTHORITY N/A			3 DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; distribution unlimited.	
2b DECLASSIFICATION/DOWNGRADING SCHEDULE N/A				
4. PERFORMING ORGANIZATION REPORT NUMBER(S) NHRC Report No. 89-23			5 MONITORING ORGANIZATION REPORT NUMBER(S)	
6a NAME OF PERFORMING ORGANIZATION Naval Health Research Center		6b OFFICE SYMBOL (If applicable) 40	7a NAME OF MONITORING ORGANIZATION Commander Naval Medical Command	
6c ADDRESS (City, State, and ZIP Code) P.O. Box 85122 San Diego, CA 92138-9174			7b ADDRESS (City, State, and ZIP Code) Department of the Navy Washington, DC 20372	
8a NAME OF FUNDING/SPONSORING ORGANIZATION Naval Medical Research & Development Command		8b OFFICE SYMBOL (If applicable)	9 PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
8c ADDRESS (City, State, and ZIP Code) NMC NCR Bethesda, MD 20814-5044			10 SOURCE OF FUNDING NUMBERS	
			PROGRAM ELEMENT NO. 65152N	PROJECT NO. M0106
			TASK NO. .001	WORK UNIT ACCESSION NO. 6001
11 TITLE (Include Security Classification) (U) DETERMINANTS OF THE DELEGATION OF HEALTH CARE ABOARD SHIPS WITH WOMEN ASSIGNED				
12 PERSONAL AUTHOR(S) D. Stephen Nice and Susan M. Hilton				
13a TYPE OF REPORT Interim		13b TIME COVERED FROM TO	14 DATE OF REPORT (Year, Month, Day) 1989, June, 07	
15 PAGE COUNT				
16 SUPPLEMENTARY NOTATION				
17 COSATI CODES			18 SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP	SUB-GROUP	Navy medicine, Patient delegation,	
			Women, Physician assistant,	
			Shipboard health care delivery, Hospital corpsman.	
19 ABSTRACT (Continue on reverse if necessary and identify by block number) The purpose of this study was to identify the potential determinants and distribution of shipboard patient delegation decisions. During a one-month period, physicians aboard five U.S. Navy ships provided an estimate of the minimum level of health care provider required to diagnose/treat each case which presented at sickcall (N=2,725). On a case-by-case basis, the physicians indicated the following potential distribution of patient delegation: consultation (1.4%), medical officer (18.6%), physician assistant/nurse practitioner (8.7%), corpsman with additional OB/GYN training (2.2%), and corpsman (69.2%). The patient's diagnosis was the best predictor of the indicated level of health care required. Medical officers were most likely to see patients with potentially serious or difficult diagnoses, including mental disorders. Patient characteristics such as sex and paygrade were not significantly related to the potential delegation decision. The data clearly document the importance of hospital corpsmen in the delivery of health care services aboard ship and support a strong, broad-based clinical training program.				
20 DISTRIBUTION/AVAILABILITY OF ABSTRACT <input type="checkbox"/> UNCLASSIFIED/UNLIMITED <input checked="" type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTK USERS			21 ABSTRACT SECURITY CLASSIFICATION Unclassified	
22a NAME OF RESPONSIBLE INDIVIDUAL D. Stephen Nice			22b TELEPHONE (Include Area Code) (619) 593-8463	22c OFFICE SYMBOL 40

DD FORM 1473, 84 MAR

83 APR edition may be used until exhausted

All other editions are obsolete

Unclassified

GSA, Government Printing Office 1989-507-007